REMARKS

Claims 1-28 were examined, and are presented for reconsideration. Claims 1 and 3 have been amended as explained below. The indication of allowable subject matter in claims 6 and 9 is noted, with appreciation.

CLAIM OBJECTION

Claim 1 is objected to for containing a phrase that the Examiner alleges is vague and not clearly supported in the specification. Applicants respectfully disagree. The phrase in question is "phase uncorrelated diffuse sound source." One of ordinary skill in the art would understand its meaning from the specification (page 5, lines 2-8), and from the attached extract from the *Larousse Dictionary of Science and Technology* regarding diffuse sound. The objection should therefore be withdrawn.

REJECTION UNDER 35 U.S.C. §112, 2ND ¶

Claim 3 is rejected as indefinite because the recitation "the axes of the panel" is said to lack antecedent basis. Claim 3 has now been amended to provide the required antecedent basis, so the rejection should be withdrawn.

PRIOR ART REJECTIONS

Takahashi (US 5,751,827) is applied in all of the rejections. Claims 1-5, 10, 11, 15-19, 27, and 28 are rejected under 35 U.S.C. §102(b) as anticipated by Takahashi. Claims 7, 8, 12-14, and 20-26 are rejected under 35 U.S.C. §103(a) as unpatentable over Takahashi in view of On (US 5,524,062). These rejections are respectfully traversed for at least the following reasons.

Claim 1 has been amended to specify (a) that the duct or wave guide has a section of substantially uniform cross-section, and (b) that the section extends from and beyond the vicinity of the sound source. These amendments find basis in at least Figs. 1 and 2 of the application as filed. Supporting language has been added to page 9 of the specification.

These amendments to claim 1 effectively distinguish the claims over Takahashi, whose channel has an *increasing* cross-sectional area between an inlet portion and an outlet opening. See, e.g., the following portions of Takahashi: Figs. 1 and 3; col. 2, lines 16-32; and claim 1. Accordingly, Takahashi does not anticipate any of the claims as amended.

The Oh reference does not make up for the deficiencies of Takahashi because each of Oh's waveguides (38a-38h) has an increasing cross-sectional area in the portion that is closest to the sound source (28). Further, it would not have been obvious to modify Takahashi's speaker in view of Oh as the Examiner alleges because Oh and Takahashi operate quite differently. Oh's speaker system works on the principle of modal resonances of the kind illustrated in his Figs. 5A and 5B. However, Takahashi eschews the use of resonant structures, which he says yields devices that are bulky and difficult to package (col. 1, lines 51-60). Accordingly, one of ordinary skill in the art would not have considered Oh's disclosure to suggest anything meaningful in relation to Takahashi.

As explained in the paragraph bridging pp. 4-5 of the present application, a phase uncorrelated diffuse sound source does not excite modal resonances. Indeed, the present invention stems from the recognition that because such a sound source does not excite modal resonances, it is possible to deliver sound to a remote location using a duct of substantially uniform cross-section rather than the larger and more complex horn arrangements that are conventionally used. The references cited by the Examiner, taken alone or in combination, fail to teach or suggest the claimed arrangement.

DOUBLE PATENTING REJECTION

All of the claims (1-28) are rejected for obviousness-type double patenting over all of the claims (1-7) of commonly owned patent to Azima (US 6,351,542). This rejection is respectfully traversed for at least the following reasons.

The rejection lumps all of the application claims together, and rejects them as a group over all of the claims of Azima as a group, without the required detailed claim-for-claim §103(a) analysis. *In re Braat*, 937 F.2d 589 (Fed. Cir. 1991); *In re Longi*, 759 F.2d 887

(Fed. Cir. 1985). *See,* M.P.E.P. §804(II)(B)(1). Thus, the record is not at all clear as to how the rejected claims are allegedly not patentably distinct from claims of the patent, and the Examiner has not satisfied his burden under M.P.E.P. § 804(II)(B)(1), which provides (with bold emphasis added):

> A double patenting rejection of the obviousness-type is "analogous to [a failure to meet] the nonobviousness requirement of 35 U.S.C. 103" except that the patent principally underlying the double patenting rejection is not considered prior art. *In re Braithwaite,* 379 F.3d 594, 154 U.S.P.Q. 29 (CCPA 1967). **Therefore, any analysis employed in an obviousness-type double patenting rejection parallels the guidelines for analysis of a 35 U.S.C. 103 obviousness determination.** *In re Braat,* 937 F.2d 589, 19 U.S.P.Q.2d 1289 (Fed. Cir. 1991); *In re Longi,* 759 F.2d 887, 225 U.S.P.Q. 645 (Fed. Cir. 1985).

Further, in comparing the claims the Examiner merely asserts that the application claims are "similar in scope ... with obvious wording variations." This, too, fails to satisfy the §103(a) analysis required by M.P.E.P. § 804(II)(B)(1), *i.e.,* the Examiner has failed to show that where one or more of the recited elements is not present in the patent claim, there is an inherent motivation suggested by the claim of the patent to yield that which is claimed in this application. Accordingly, should the Examiner restate the double patenting rejection with the proper support in a future Office Action, Applicants respectfully request that such Office Action be made non-final.

Conclusion

Applicants submit that the present application is now in condition for allowance. Favorable reconsideration of the application as amended is respectfully requested.

The Examiner is invited to contact the undersigned by telephone if it is felt that a telephone interview would advance the prosecution of the present application.

The Commissioner is hereby authorized to charge any additional fees which may be required regarding this application under 37 C.F.R. §§ 1.16-1.17, or credit any overpayment, to Deposit Account No. 19-0741. Should no proper payment be enclosed herewith, as by a check being in the wrong amount, unsigned, post-dated, otherwise improper or informal or

even entirely missing, the Commissioner is authorized to charge the unpaid amount to Deposit Account No. 19-0741. If any extensions of time are needed for timely acceptance of papers submitted herewith, applicant hereby petitions for such extension under 37 C.F.R. §1.136 and authorizes payment of any such extensions fees to Deposit Account No. 19-0741.

Respectfully submitted,

Date JUN 27 2003

By

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differential winding (*ElecEng*) A winding in a compound motor which is in opposition to the action of another winding.

differentiating circuit (*ElecEng*) (1) Amplifier having a combination of resistive input and feedback inductance, or capacitive input and feedback resistance, such that the output is proportional to the rate-of-change (differential) of the input signal. (2) A passive circuit comprising either R and L or C and R, whose output is proportional to the rate-of-change of the input signal. This circuit does not produce as accurate a result as the active circuit described above. Used, for example, to detect sudden changes in otherwise steady wave form and to modify waveforms in digital circuits.

differentiating solvent (*Chem*) See **levelling solvent, non-aqueous solvents.**

differentiation (*Biol*) (1) The qualitative changes in morphology and physiology occurring in a cell, tissue or organ as it develops from a meristematic, primordial or unspecialized state into the mature or specialized state. (2) Removing excess stain from some of the structures in a microscope preparation so that the whole can be seen more clearly.

differentiation (*Geol*) The process of forming two or more rock types from a common magma.

differentiation (*Maths*) The operation of finding a **derivative.**

differentiation antigen (*Biol*) A structural macromolecule that can be detected by immunological reagents and is associated with the differentiation of a particular cell type. See **cluster of differentiation antigen.**

differentiator (*ElecEng*) See **differentiating circuit.**

diffluence (*Meteor*) The spreading apart of streamlines.

diffraction (*Phys*) The phenomenon, observed when waves are obstructed by obstacles or apertures, of the disturbance spreading beyond the limits of the geometrical shadow of the object. The effect is marked when the size of the object is of the same order as the wavelength of the waves and accounts for the alternately light and dark bands, diffraction fringes, seen at the edge of the shadow when a point source of light is used. It is one factor that determines the propagation of radio waves over the curved surface of the Earth and it also accounts for the audibility of sound around corners. See **Fraunhofer diffraction, Fresnel diffraction.**

diffraction analysis (*Crystal*) Analysis of the internal structure of crystals by utilizing the diffraction of X-rays caused by the regular atomic or ionic lattice of the crystal.

diffraction angle (*Phys*) The angle between the direction of an incident beam of light, sound or electrons, and the direction of any resulting diffracted beam.

diffraction grating (*Phys*) An optical device for producing spectra. In one form the diffraction grating consists of a flat glass plate with equidistant parallel straight lines ruled in its surface by a diamond. There may be as many as 1000 per millimetre. If a narrow source of light is viewed through a grating it is seen to be accompanied on each side by one or more spectra. These are produced by diffraction effects from the lines acting as a very large number of equally spaced parallel slits.

diffraction pattern (*Phys*) The pattern formed by equal-intensity contours as a result of diffraction effects, eg in optics or radio transmission.

diffractometer (*Phys*) An instrument used in the analysis of the atomic structure of matter by the diffraction of X-rays, neutrons or electrons by crystalline materials. A monochromatic beam of radiation is incident on a crystal mounted on a goniometer. The diffracted beams are detected and their intensities measured by a counting device. The orientation of the crystal and the position of the detector are usually computer-controlled.

diffuse density (*ImageTech*) The density of a photographic image when measured by diffuse light rather than specular. See **Callier effect.**

diffuse growth (*Bot*) Growth where cells divide throughout the tissue. Cf **apical growth, intercalary growth, trichothallic growth.**

diffuse placentation (*Zool*) Having the villi developed in all parts of the placenta, except the poles, as in lemurs, most ungulates and Cetacea.

diffuse porous (*Bot*) Wood having the pores distributed evenly throughout a growth ring or changing in diameter gradually across it, eg birch, evergreen oaks. Cf **ring porous.**

diffuser (*Acous*) An irregular structure, eg pyramid or cylinder, to break up sound waves in rooms. See **scatterer.**

diffuser (*Aero*) A means for converting the kinetic energy of a fluid into pressure energy; usually it takes the form of a duct which widens gradually in the direction of flow; also fixed vanes forming expanding passages in a compressor delivery to increase the pressure.

diffuser (*Eng*) A chamber surrounding the impeller of a centrifugal pump or compressor, in which part of the kinetic energy of the fluid is converted to pressure energy by a gradual increase in the cross-sectional area of flow.

diffuser (*ImageTech*) Translucent material in front of studio lamp to diffuse light and soften shadows.

diffuse reflection (*Phys*) See **non-specular reflection.**

diffuse-reflection factor (*Phys*) The ratio of the luminous flux diffusely reflected from a surface to the total luminous flux incident upon the surface.

diffuse series (*Phys*) Series of optical spectrum lines observed in the spectra of alkali metals. Energy levels for which the orbital quantum number is two are designated *d-levels.*

diffuse sound (*Acous*) Sound which is reflected in all directions inside a volume.

diffuse tissue (*Bot*) A tissue consisting of cells which occur in the plant body singly or in small groups intermingled with tissues of distinct type.

diffuse transmittance (*Phys*) See **transmittance.**

diffusion (*Chem*) The general transport of matter (atoms, molecules, ions) through thermal agitation. A net flux results from diffusion when there is a concentration gradient. In a crystalline solid, interstitial atom, lattice vacancy and impurity atom diffusion are thermally activated. Diffusion is often used to introduce controlled quantities of impurities into the surfaces of semiconductors (for doping) and metals (for carburizing and nitriding etc). See **diffusion coefficient, Fick's laws of diffusion.**

diffusion activation energy (*Phys*) Activation energy required for temperature-dependent diffusion of interstitial atoms, lattice vacancies or impurities in a crystalline solid. The diffusion coefficient D is given by $D=D_0\exp(-E/kT)$, where D_0 is a constant, E is the activation energy of the process, T is the temperature and k is Boltzmann's constant.

diffusion area (*NucEng*) Term used in reactor diffusion theory. One-sixth of the mean square displacement (ie direct distance travelled irrespective of route) between point at which neutron becomes thermal and where it is captured.

diffusion attachment (*ImageTech*) Lens accessory for softening the outline of the image in a camera or enlarger, often a disk with a finely etched or engraved surface.

diffusion barrier (*Phys*) Porous partition for gaseous separation according to molecular weight and hydrodynamic velocities, esp for separation of isotopes. A fired but unglazed plate.

diffusion capacitance (*Phys*) The rate of change of injected charge with the applied voltage in a semiconductor diode.

diffusion coating (*Eng*) Methods by which an alloy or metal are allowed to diffuse into the surface of an underlying metal. They can involve heating and exposing the metal to a solution of the coating material.

diffusion coefficient (*Chem*) In the diffusion equation (Fick's first law), the coefficient of proportionality